

REMARKS

This responds to the Office Action mailed on March 28, 2005, and the references cited therewith.

Claims 1, 2, 10 and 23 are amended. Claims 1-4, 10-15 and 23-25 are now pending in this application.

§102 Rejection of the Claims

Claims 1, 3, 4, 24 and 25 were rejected under 35 U.S.C. § 102(b) as being anticipation by Rudolf (U.S. Patent No. 4,636,827, disclosed by Applicants).

Claim 1 has been amended to indicate that the extended portion of the floating gate is electrostatically coupled to the floating gate. The chemoreceptive layer is then coupled to the extended portion. This recites a structure that is different from the structure described in Rudolf, where the gate is continuous, and separated from the ion responsive layer by an insulator. Rudolf does not show a chemoreceptive layer coupled to an extended portion of a floating gate that is electrostatically coupled to the floating gate. Support for this amendment is found in paragraph [0017], where the control gates 125, 130, 135 and 140 in FIG. 1 are capacitively coupled to gate 120. As the structure claimed is not shown or described in Rudolf, the claim is now believed allowable.

Claim 2 was indicated as allowable, and has been amended to be independent, incorporating claim 1. It is thus believed in condition for allowance.

Claim 4 recites the use of a nitride plug to provide electrical isolation between the chemoreceptive layer and the extended portion of the floating gate. This is believed to recite a structure that is quite different from that disclosed in Rudolf. 13b is described and shown as a layer, not a plug. The plug, as claimed and described in the present application provides an insulator in an extended portion of the floating gate. In other words, it breaks the floating gate into two pieces, such that they form a capacitively or electrostatically coupled portion. Layer 13b in Rudolf does not form the same type of structure as claimed.

Claim 24 recites a structure that is different than Rudolf. In particular, it recites a sensing gate that is insulated by a dielectric layer between the extended portion of the floating gate, and the sensing gate. The sensing gate then supports the chemoreceptive layer. Rudolf lacks a

sensing gate that is separated from the extended portion of the floating gate by an insulator. Rudolf only shows the layer 15 separated from the extended portion of the gate 20. It does not show the sensing gate claimed in claims 24 and dependent claim 25. A proper prima facie case of anticipation has not been established since each and every element is not shown by the reference. It is requested that the rejection be withdrawn.

Claim 10 was rejected under 35 U.S.C. § 102(b) as being anticipated by Au et al. ("Au") U.S. Patent No. 5,719,520. This rejection is respectfully traversed. The term "control gates" is described in the application as an extended portion of the floating gate that is capacitively coupled to the floating gate. Claim 10 has been amended to clarify that the control gates are capacitively coupled. It is now believed similar to claim 11, which was indicated as being allowable.

Claim 23 was rejected under 35 U.S. C. § 102(b) as being anticipated by Kolesar, Jr. U.S. Patent No. 5,071,770 (disclosed by Applicants). Claim 23 has been amended to clarify that the sample creates a charge on the fingers that induces the voltage on the floating gate. Provision of the sample to the fingers is what causes the induction of the voltage. Kolesar, Jr., induces the voltage through a pulse generator 126, and "the instantaneous electrical impedance between the conductors being determined by the conductivity of the thin film membrane..." Col. 4, lines 24-26. Kolesar, Jr., does not induce a voltage on a floating gate capacitively coupled to the fingers, and also lacks the element of modulating current based on the induced voltage on the floating gate.

Allowable Subject Matter

Claims 2 and 11-15 were objected to as being dependent upon a rejected base claim, but were indicated to be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

CONCLUSION

Applicant respectfully submits that the claims are in condition for allowance, and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney at (612) 373-6972 to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.


Respectfully submitted,

EDWIN KAN ET AL.

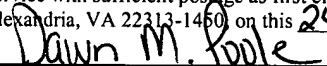
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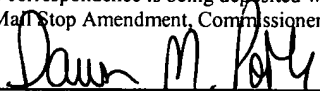
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Date 6/24/2005

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CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: Mail Stop Amendment, Commissioner of Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on this 24th day of June, 2005.





Name

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